UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,752	11/28/2005	Yasuo Iimori	Q88220	2479

65565 7590 06/05/2007

SUGHRUE-265550
2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER	
PHAN, THAI Q	

ART UNIT	PAPER NUMBER
2128	

MAIL DATE	DELIVERY MODE
06/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,752	IIMORI, YASUO	
	Examiner	Art Unit	
	Thai Phan	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/05, 11/05, 12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to patent application S/N: 10:536,752, filed on 05/27/2005. Claims 1- 9 are pending in the action.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 5/27/2005, 11/28/2005, and 12/18/2006 were being considered by the examiner.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawakita et al, US patent no. 6,839,642.

As per claim 1, Kawakita anticipates a method and system for bending durability

prediction method of predicting bending durability of a plurality of wires laid at a predetermined bend, and of a bend protection member attached at the bend to protect the plurality of wires by using an infinite element method, the bending durability prediction method comprising:

a setup step of setting up the plurality of wires, the bend protection member, an atmosphere temperature, pre-bending initial shapes for the wires and the bend protection member and final bent shapes for the wires and the bend protection member (Background, col. 1, lines 8-19, col. 4, lines 21-38);

an infinite element model preparation step of preparing infinite element models for the plurality of wires and the bend protection member;

a stress calculation step of calculating stress, for each of infinite elements of the infinite element models, produced by bending the infinite elements from the initial shape to the final bent shape (col. 4, lines 43-65, cols. 5-9),

a maximum stress search step of searching, among the stresses obtained at the stress calculation step, for the maximum stress for each of the plurality of wires and the bend protection member; a prediction function acquisition step of obtaining prediction functions for the wires, the bend protection member and the atmosphere temperature designated at the setup step (Figs. 3-16, 23, 25, col. 6, lines 1-10, lines 44-61, col. 12, lines 62-67, cols. 16-17, col. 21, lines 26-52, cols. 22-26);

a predicting step of referring to the prediction functions obtained at the prediction function acquisition step, obtaining numbers of bendings for endurance which correspond to the maximum stresses for the wires and the bend protection member

(col. 28, line 5 to col. 29, line 8),

and identifying the smallest number of bendings for endurance; and obtained an output step of outputting the smallest number of bendings at the predicting step (col. 28, lines 28-49).

As per claim 2, Kawakita anticipates the design and prediction method includes: specifying a position on the wires or the bend protection member corresponding to the smallest number of bending for endurability prediction (col. 9, lines 25-39).

As per claims 3 and 4, Kawakita anticipates a bending curve representing a confident interval relative to a modular regression function for the stress and bending endurance, wiring characteristics such as wire size, number of wires, and so on (cols. 19-22).

As per claim 5, Kawakita anticipates a storing step of previously storing stress tables which represent minimum stresses according to which it is assumed that the plurality of wires and the bend protection member will be damaged (col. 28, lines 5-18);

a stress table reading step of reading stress tables corresponding to the plurality of wires, the bend protection member and the atmosphere temperature designated in the setup step (col. 24, lines 51-59, col. 28, lines38-57, for example) ; and

a damaged member specifying step of specifying the wire or the bend protection member that is first damaged, while referring to the stress tables that are read at the stress table reading step and the individual maximum stresses that are found at the maximum stress search step for the wires and the bend protection member,

the output step outputs information specifying the wire or the bend protection member that is first damaged (col. 27, line 9 to col. 28, line 57).

As per claim 6, Kawakita anticipates a method and system for modeling and predicting a bending durability bending durability prediction method of predicting a bending durability of a plurality of wires laid at a predetermined bend, and of a bend protection member attached at the bend to protect the plurality of wires by using an infinite element method with feature limitations very identical to the claimed invention. According to Kawakita, the bending durability prediction method comprising:

a storing step of previously storing stress tables which represent minimum stresses according to which it is assumed that the plurality of wires and the bend protection member will be damaged ((Background, col. 1, lines 8-19, col. 4, lines 21-38);

a setup step of setting up the plurality of wires, the bend protection member, an atmosphere temperature, pre-bending initial shapes for the wires and the bend protection member and final bent shapes for the wires and the bend protection member; an infinite element model preparation step of preparing infinite element models for the plurality of wires and the bend protection member (col. 4, lines 43-65, cols. 5-9);

a stress calculation step of calculating stress, for each of infinite elements of the infinite element models, produced by bending the infinite elements from the initial shape to the final bent shape (Figs. 3-16, 23, 25);

a maximum stress search step of searching, among the stresses obtained at the stress calculation step, for the maximum stress for each of the plurality of wires and the bend protection member (cols. 16-17, col. 21, lines 26-52, cols. 22-26);

a stress table reading step of reading stress tables corresponding to the plurality of wires, the bend protection member and the atmosphere temperature designated in the setup step (col. 25, lines 1-5, lines 27-45, col. 26, lines 10-28);

a damaged member specifying step of-specifying the wire or the bend protection member that is first damaged, while referring to the stress tables that are read at the stress table reading step and the individual maximum stresses that are found at the maximum stress search step for the wires and the bend protection member; and

an output step of outputting information specifying the wire or the bend protection member that is first damaged (cols. 27-28).

As per claim 7, Kawakita anticipates the wire thickness or the diameter of a wire (col. 21, lines 39-52).

As per claims 8 and 9, Kawakita anticipates a method and system for bending durability prediction method of predicting bending durability of a plurality of wires laid at a predetermined bend, and of a bend protection member attached at the bend to protect the plurality of wires by using an infinite element method, the bending durability prediction method comprising:

a setup step of setting up the plurality of wires, the bend protection member, an atmosphere temperature, pre-bending initial shapes for the wires and the bend protection member and final bent shapes for the wires and the bend protection member (Background, col. 1, lines 8-19, col. 4, lines 21-38);

an infinite element model preparation step of preparing infinite element models for the plurality of wires and the bend protection member;

a stress calculation step of calculating stress, for each of infinite elements of the infinite element models, produced by bending the infinite elements from the initial shape to the final bent shape (col. 4, lines 43-65, cols. 5-9)

a maximum stress search step of searching, among the stresses obtained at the stress calculation step, for the maximum stress for each of the plurality of wires and the bend protection member; a prediction function acquisition step of obtaining prediction functions for the wires, the bend protection member and the atmosphere temperature designated at the setup step (Figs. 3-16, 23, 25, cols. 16-17, col. 21, lines 26-52, cols. 22-26).;

a predicting step of referring to the prediction functions obtained at the prediction function acquisition step, obtaining numbers of bendings for endurance which correspond to the maximum stresses for the wires and the bend protection member (col. 28, line 5 to col. 29, line 8),

and identifying the smallest number of bendings for endurance; and obtained an output step of outputting the smallest number of bendings at the predicting step (col. 28, lines 28-49).

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. US patent no. 5,390,127, issued to Tang et al, on Feb. 1995

2. US patent no. 6,374,022, issued to Parmigiani et al, on Apr. 2002

3. US patent application publication no. 2002/0183993, issued to Hirata, Ichiro, on Dec. 2002

4. US patent application publication no. 2006/0052990, issued to Iimori, Yasuo, on Mar. 2006

5. US patent application publication no. 2006/0167582, issued t Jayko, Frederic, on July 2006

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Phan whose telephone number is 571-272-3783. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 17, 2007

Thai Phan

THAI PHAN
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100